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## Multiple Stable States at the Desert Margins: the Effect of Vegetation-Soil Moisture Feedbacks

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There is general consensus on the impact of vegetation cover on surface soil moisture and on its role on sub-canopy seedling establishment in arid and semiarid ecosystems. We interpret the effect of this vegetation-soil moisture feedback through a minimalistic model of vegetation dynamics coupled with a seasonal soil water balance. Within a range of climate conditions, these dynamics exhibit two preferential states, corresponding to desert and vegetated conditions. The model is used to study the sensitivity of the dynamics to climate (precipitation) fluctuations: phase transitions between the two states are found to occur as a result of the hysteresys of the system.